actual character of the rock or the locality which the animal has reached. The great block in the foreground, upon which the scapegoat is standing, might be either a limestone or a felstone. The same rock constitutes the nearer mountain, and this, judging from the peculiar way in which the dominant joint planes alter their direction, can only be igneous. Hence we must assume it to be a felstone with a rather platy jointing. If this be the case, then the mountain-crests are exceptionally sharp, and the structure to which this is due is insufficiently indicated. The same general character is maintained in the distant mountains, but these are even more jagged. The picture suggests a combination of some Sinai photographs, rather imperfectly understood, with memories, which have become vague, of the Southern Alps. Might it not also be doubted whether such a waterfall as that on the right would occur in a "lone land" on the borders of Palestine? In the "Diamond Merchants" (258), if we do not wrongly identify the lighthouse on the distant skerries, the scene represented is in the immediate neighbourhood of the Land's End. The rock there should be granite, and the structure of the craglet in the foreground will accord with this, though the colour is unusual for that district; but the cliffs beyond much more resemble, especially in a sort of streakiness, some of the stratified rock locally called "killas." In "Past Work" (489), by the same artist, there is a similar uncertainty of treatment in the rocks, showing that he has not thought them worthy of that appreciative study which he has bestowed upon most matters connected with the sea. The locality of 271, "The First to look out for the Homeward Bound," may be presumed to be also Cornwall; but the rocks belong to quite a new type, and if they are anything, must be some kind of hard mudstone. 315, "Mountain Tops," is bold in colouring and in design, but can scarcely be regarded as successful. The floating clouds and the strong shadow into which the hills are cast by the gleaming sky, naturally obscure their structure, but would hardly account for the streakiness which they exhibit, as though the picture had been finished by wiping it down with a brush parallel to the leading outlines of each peak. It reminds us of an exaggeration of one of Turner's views of Loch Coruisk. 317, "A Babbling Brook in Ochmore," though hung rather too high, shows a careful study of gently-inclined strata. Mr. Brett, in "St. Ives' Bay" (340), gives us an excellent study of some granite rock in the middle distance of his picture; but this artist's mastery of his subject is brought out better in "Golden Prospects" (445). In the foreground is a ruined craglet or miniature "tor" of granite—a wonderfully truthful study; form, structure, texture of the rock, and the crisp crusting of dry lichens, perfectly rendered. The bald patches of granite amid the rough vegetation are admirably truthful, as is the hazy light, which renders the more distant cliffs, massive as they really are, almost ethereal. Out at sea, if we mistake not, is the Longships Lighthouse and its dangerous reef. Those who in any way equal Mr. Brett in his love for the Cornish coast will find it hard to tear themselves away from this picture of one of its grandest scenes. It may however be remarked that the general effect suggests a day early in the summer, but still the heather is in bloom.[1] There is some good promise in the limestone hills in 475, "A Grecian Tomb," though the hazy evening light is favourable to the avoidance of difficulties. In the "Ramparts of Idwal" (406), the colour is rather too monotonous, but a knoll with ledges of rock cropping out through rough turf and in the bed of a streamlet is admirably rendered. The peculiar texture of certain rocks composed of indurated volcanic ash seems to have impressed itself upon the artist. In "Hope Deferred" (419) there is little character in the rock; that however in the foreground may only be intended for very hard earth. In "Lofoden" (485) Mr. E. T. Compton gives us a careful study of a rather massive schistose rock in the mountain in the middle distance, and of one more granitoid in the foreground. The jointed structure of the latter and rather scaly aspect of parts of the former are well rendered, and the general effect of the picture is truthful, though the author has not selected for his subject one of the most characteristic parts of the Lofoden Islands. It would not be difficult to find a view like this in several spots on the mainland, but the wilder mountains of Hindö and Ost Vaagen are without a parallel in Scandinavia. Mr. C. Stuart's "Uncertain Weather" (507) is hung too high, but it appears to be a very careful study of the well-known crag overhanging the tarn in Cwm Buchan. In Mr. B. W. Leader's "Glyder Vawr" (521) we have a careful study of the felstone crags in the upper part of that mountain. The somewhat curving surfaces of outcropping rock in the middle distance of the picture and the boulders in the foreground are well rendered. The peculiar effect which the artist has chosen—a sudden gleam of sunlight glinting upon wet surfaces, gives to the rock an exaggeratedly rugged structure. The effect may be truthful, but is certainly rare, and we may doubt whether it is wise to select one producing results so abnormal. A rock in the foreground of "O'er the Heather" (539) is spotty, muddy, and indefinite. An unfamiliar effect has been chosen in "Kynance Cori as it appeared one day last January" (564), for a thick coating of snow rests upon the rocks. It is hung rather high, but the author does not seem to us to have quite succeeded in catching the peculiar structure and weathering of serpentine. "Nature's Decay" (905) also suffers from being too high. The pile of *débris*—earth and trunks and fallen branches—masks a good deal of the rock, but what is visible seems to be carefully drawn; that in a more distant ravine appears a little conventional. Sir R. Collier, in his "Glacier of the Rhone" (984), gives us one of his usual careful studies of rock and ice. The outcropping ledges and scattered boulders among the rough herbage are carefully drawn, making a most truthful rendering of a portion of rugged mountain-side. It may however be doubted whether the ice in the lower part of a glacier could be so generally blue as it is here represented. "Boulders at Rest" (1352) has some good points about it. The granite crag is carefully studied, and the structure is well rendered, but the two "natural" arches have a rather artificial aspect, and certainly weaken the effect of the composition. The boulders beneath have their individuality remarkably well preserved, but the artist has not been so successful in rendering their texture, which is rather woolly. In "The Dead Sea from Engedi" (1360) the artist appears to have striven honestly but not very successfully to record the scene. The rocks exhibit a streakiness of dubious authenticity, and convey to one the impression that while the general effect was felt by him the reasons for it were not understood.

Several other pictures we have been obliged to leave unnoticed, either because the rocks are obviously quite a subordinate part (though from our point of view that is no reason why they should not be accurate), or because the picture has been hung so high that it cannot be properly studied, and criticism might be unjust to the artists. The water-colour drawings we have not yet examined.

T. G. BONNEY

NOTES

THE death is announced of Mr. John Blackwall, F.L.S., at Llanrwst, on May 11, at the great age of ninety-two. He was elected a Fellow of the Linnean Society as far back as 1827, and was nearly its oldest member. His principal work was a magnificent illustrated Monograph of the British Spiders, published by the Ray Society about twenty years ago. He also published a considerable number of papers on general zoology, in which the possession of keen powers of observation is everywhere evident. In 1834 a volume from his pen appeared under the title of "Researches in Zoology," a record of observations in the field, with deductions therefrom; a second edition was published in 1873.

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[1] While we were studying this picture a bystander described it to his companion as "No doubt the Needles idealised"

THE *Launceston Examiner*, of March 14, announces the death of Mr. Ronald Campbell Gunn, F.R.S., at the age of seventy-three years. Mr. Gunn, who was born at the Cape of Good Hope, and landed in Tasmania in 1830, held successively several highly important official positions in the colony. Mr. Gunn's tastes, the *Examiner* states, were eminently scientific, but botany was his favourite study, and this subject he was indefatigable in pursuing. At an early period he was elected a Fellow of the Linnean Society of London, and subsequently a Fellow of the Royal Society of London, the highest scientific honour which can be conferred on any person. Mr. Gunn began to investigate the botany and natural history of Tasmania in 1831, and in the prosecution of his researches rambled over most of the colony. His botanical labours are recorded in Sir Joseph D. Hooker's "Flora of Tasmania," and accounts of his excursions and other scientific labours appear in the *Annals of Natural History*, *Journal of Botany*, &c. He was also editor of the *Tasmanian Journal*, a scientific serial published by the Royal Society of Tasmania. The late Mr. John Gould, in his valuable work upon the "Birds of Australia," acknowledges the assistance which he received while in Tasmania from Mr. Gunn. We may also mention that Mr. Gunn drew up for West's "History of Tasmania" a compendium of the zoology of Tasmania.

MR. ALBERT BRUCE JOY'S statue for the Harvey Tercentenary Memorial is now cast in bronze, and will probably be soon sent to Folkestone, the native place of the discoverer of the circulation of the blood, where a suitable site has been provided for it on that well-known promenade, the Lees. In modelling his successful statue Mr. Bruce Joy has closely followed the portrait of Harvey by Janssens, preserved in the Royal College of Physicians. Mr. Joy has also produced a reduction of the bust of Harvey.

THE Scottish Meteorological Society have received the observations made during last winter by Mr. A. O. Thorlacius, their observer at Stykkisholm, Iceland, from which it is seen that last winter was one of the severest of which there is any record, ice having formed in the harbour at least four feet thick. The only winter that can compare with the last during the present century was that of 1807, when the inhabitants of Grimso, an island lying nearly sixteen English miles off the coast of Iceland, walked across the ice to the trading station of Ofjord, a thing which was not known ever to have occurred before.

DURING his last visit to the United States, it will be remembered, Prof. Tyndall initiated a trust fund with the object of assisting students in physics who should show aptitude for original study and should wish to complete their education in Germany. It is stated that the fund has so far prospered as to furnish a moderate income for two students, who have just been nominated.

THE Glasgow Mechanics Institution, which as such has existed since 1823, has recently had its constitution altered and its name changed to that of "College of Science and Arts." At the close of the session Sir William Thomson, in distributing the prizes, mentioned that he had imbibed his first ideas of chemistry in the Mechanics Institution, and expressed himself much pleased with its present appearance, and the prospects of the Institution under its new name, and the superintendence of Mr. A. Jamieson, the principal. On this occasion the hall was lighted with Swan's electric lamps under arrangements very efficiently made by Mr. Jamieson.

THE Russian ladies seem to be advancing rapidly and surely in the direction of higher education. Besides the medical courses at St. Petersburg, there was opened two years ago in the same city a kind of ladies' university, being a series of courses for higher training in the mathematical, physical, and historical sciences. We learn now, from the annual report recently published, that notwithstanding all opposition on the part of Government to this institution, it has acquired further development. The third class is opened this year, and the fourth will be opened next year. The number of lady students, which was 789 in 1879, has already reached 840, and Prof. Famintzin observes that this number would have been much larger were it not for the obstructive regulations which are intended to check the further development of the institution. It is worthy of notice that the money necessary for the institution is collected from private sources—students' fees (5*l.* per annum) or by voluntary subscriptions. Like courses are already opened at Moscow and at Kieff, but the instruction given at Moscow is more superficial in what concerns natural science.

THE French Association for the Advancement of Science is to meet at Rochelle next year.

THE arrangements for the International Exhibition on the occasion of the International Medical Congress have within the last few days been nearly completed. The Exhibition itself, quite apart from the Congress, will be held in the eastern, the western, and the quadrant arcades of the Horticultural Gardens, and in some of the galleries of the Albert Hall. The Exhibition will be open from July 16 to August 13, but it is not yet decided whether there shall be any formal opening. That the Exhibition will be really international is indicated by the fact that there will be contributors from France, Germany, Austria, Italy, Belgium, Holland, Norway, and the United States. Much still remains to be done, but there is every prospect of the Exhibition being a credit to England. The secretary is Mr. Mark Judge, of the Parkes Museum of Hygiene, University College, Gower Street. From him particulars may be obtained.

IN the *Proceedings* of the Natural History Society of Glasgow Mr. J. A. Harvie Brown continues his reports on Scottish Ornithology. In the second part of the fourth volume we have the result of his observations, extending from October 1, 1879, to September 30, 1880. The utility of Mr. Harvie Brown's observation consists in a comparison of the occurrence of migratory birds in Scotland with the meteoric conditions of the season, and it seems perfectly certain that the increase or decrease in the number of our summer visitants depends greatly upon the strength and duration of favourable or adverse winds prevailing at the time they visit our shores. We are pleased to hear Mr. Cordeaux is also compiling records of birds noticed in the Humber district, and it would be interesting to naturalists if similar observations could be regularly made in different parts of Great Britain.

AN exhibition of microscopes and other scientific apparatus was held in January in place of one of the ordinary weekly entertainments at the Albert Institute, Windsor. This was so successful that another was held in April, and the Windsor and Eton Scientific Society formally constituted. The general meetings will take place monthly.

WITH respect to Burnham Beeches, we are told on good authority that the Corporation of London (who recently purchased the estate) have forbidden the picking of flowers on account of its disturbing the game! Among other things this prevents the science-masters at Eton going there on a half holiday with their botanical boys or the members of the School Natural History Society.

In consequence of Mr. Bidwell's severe indisposition, he has been unable to prepare his paper on "Telegraphic Photography," announced to be read before the Applied Chemistry and Physic Section of the Society of Arts to-day, and the reading has, therefore, been unavoidably postponed.

Two strong shocks of earthquake occurred at Chio on the night of May 20, bringing down several of the houses that remained standing after the late catastrophe.

About a year ago the Boston Society of Natural History celebrated its semi-centennial by a jubilee meeting, and decided to commemorate the event by publishing a memorial volume consisting of memoirs from those among its present associates, eminent in various departments, whose circumstances enabled them to contribute. The New York *Nation* now announces the publication of the volume, a magnificent 4to of 600 pages, with 50 plates.

At a meeting of the Sanitary Institute of Great Britain, held on May 18, Dr. B. W. Richardson, F.R.S., in the chair, the discussion was continued upon the address given by the chairman, entitled "Suggestions for the Management of Cases of Small-Pox and Infectious Diseases in the Metropolis and Large Towns." Mr. Pearson Hill gave a number of facts relating to the Hampstead Small-Pox Hospital, and a letter was read from Dr. Tripe giving statistics relating to the hospital at Hackney. Dr. W. H. Corfield, Dr. Willoughby, Mr. Hempson Denham, and Mr. Bridgwater also took part in the discussion.

A trapper who recently arrived with musk-rat skins at Kingston, Ontario, delared, according to the *Colonies*, that the animal is becoming rapidly extinct.

The telephone is being introduced by the New Zealand Government into places where the telegraph does not exist. Between Collingwood and Motucka, a distance of fifty miles, a line has been opened, and is said to work admirably.

The work of the International Electrical Exhibition Commission is progressing, spaces having been allotted to the several countries on the ground-floor of the central transept. Meanwhile the general arrangement of the first floor has been decided upon. A saloon has been reserved for the Brush light and machines, and another for the Sawyer incandescent light. Mr. Edison will have a special saloon for his inventions. M. Maisme's incandescent light will be employed in lighting a saloon. The Jamin, Jablockhoff, Werdermann, and some others will each have its saloon. One of these is to be lighted by Tommassi voltaic elements.

It is announced from Nanaimo that further important discoveries of coal have been made in Vancouver Island.

It is believed in New Zealand that petroleum exists in large quantities in the North Island, and two companies are now engaged in sinking for it.

The additions to the Zoological Society's Gardens during the past week include an African Cheetah (*Felis jubata*), a Secretary Vulture (*Serpentarius reptilivorus*) from Africa, presented by Mr. James S. Jameson; a Plantain Squirrel (*Sciurus plantani*) from Java, a Chipping Squirrel (*Tamias striatus*) from North America, presented by Mr. W. Bassano; a Ceylonese Hawk-Eagle (*Spizaetus ceylonensis*) from Ceylon, presented by Mr. G. Lyon Bennett; a Loggerhead Turtle (*Thalassochelys caouana*) from the Atlantic Ocean, presented by the Earl Brownlow; three Bull Frogs (*Rana mugiens*), a Noisy Frog (*Rana clamata*) from Nova Scotia, presented by Mr. Hugo Müller; two Green Lizards (*Lacerta viridis*), European, received in exchange; a Crested Guinea Fowl (*Numida cristata*), a Long-nosed Crocodile (*Crocodilus cataphractus*) from West Africa, on approval; six Speckled Terrapins (*Clemmys guttata*), two Painted Terrapins (*Clemmys picta*) from North America, purchased; an Eland (*Oreas canna*), an Axis Deer (*Cervus axis*), born in the Gardens; three Spotted-billed Ducks (*Anas pœcilorhyncha*), bred in the Gardens.

GEOGRAPHICAL NOTES

The anniversary meeting of the Geographical Society was held on Monday last, Lord Aberdare, the President, occupying the chair. Mr. Markham read the report of the Council for the past year, which showed that, though the number of Fellows had not materially increased, the Society was in a satisfactory and prosperous condition, its assets being valued at close upon 40,000*l*., exclusive of the map collection and library. After a reference to publications it was stated that an observatory which had been built and fitted up at the Society's house had been in constant use by students and others who wished to practise observing or to get their instruments adjusted. The large map of Eastern Equatorial Africa by Mr. Ravenstein was said to be approaching completion, but the rate of progress is seemingly slow, as only three out of twenty-four sheets are reported to be printed off. Catalogues of the library and map-collection are in various stages of preparation. The presentation of medals afterwards took place, when Capt. de Fonseca Vaz, naval attaché of the Portuguese Legation, received the Founder's for Major Serpa Pinto, acknowledging the honour in a very happy speech, in which allusion was made to his own geographical work on the Zambesi. Mr. C. R. Markham received the Patron's medal on behalf of Mr. Leigh Smith, who is at Peterhead, preparing for another voyage to Franz-Josef Land. The Schools' prize medals were afterwards distributed among the boys from the City of London School and Dulwich and London International Colleges, whose names we gave in a recent issue. Mr. Francis Galton announced some changes in future examinations, adding that Australia has been chosen as the special subject for 1881-2. The ballot having been taken for the new Council, Lord Aberdare was re-elected President, and Mr. R. H. Major was elected a Vice-President in the place of the Hydrographer of the Admiralty, and Mr. D. W. Freshfield and Lord Reay respectively Secretary and Foreign Secretary in the places of Mr. Major and Lord Arthur Russell. Among the new members of Council are Col. Grant, Gen. Pitt-Rivers, and Col. Yule. Lord Aberdare lastly read a short address, in which he gave an interesting retrospect of the geographical work of the past year. The usual dinner was held in the evening, when the principal speakers, besides Lord Aberdare, were Count Münster, Lord Houghton, and the American Minister.

The French, like the Italians, intend to explore the depths of the Mediterranean this summer; the Minister of Marine has decided to place the *Travailleur* at the disposal of a commission charged with the work of deep-sea exploration. The vessel will set out for the Mediterranean about the end of June.

The following explorations will be made during this summer by the Russian Mineralogical Society:—In the province of Kostroma, for the completion of a geologicacal map of the province, by M. Nikitin; the exploration of the Tertiary and Chalk formations in the province of Bessarabia, by Prof. Sintzoff; in the Polish province of Lublin, in continuation of the researches of the late Prof. Barbot-de-Marny; the examination of the relations between the old and the new Caspian formations in the province of Astrakhan, in the Bistchi and Djaksy-Sassyk Mountains.

The *Zeitschrift* of the Berlin Geographical Society, No. 92, contains the conclusion of Herr Niederlein's paper "On the Scientific Results of an Argentine Expedition to the Rio Negro"; "Travels and Topographical Surveys in the North Chinese Province of Chi-li," by Dr. v. Mollendorff, with two maps; an interesting extract from a Hawaiian manuscript, by Dr. Ad. Bastian, and varieties from Australia, by Herr H. Greffrath. In the *Verhandlungen* of the same Society are papers: "On the Maories of New Zealand," by Dr. Beheim-Schwarzbach; "On Ice-caves and Abnormal Ice-formations," by Prof. Schwalbe; and "On the South Carpathians," by Dr. Paul Lehmann.

At a recent meeting of the Bengal Asiatic Society, Mr. F. A. de Roepstorff read some interesting notes on the in-